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WESSENDORF, TERESA D	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/077,727	GAVIN ET AL.	
	Examiner	Art Unit	
	TERESA WESSENDORF	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,4,6-9,11,35-36,40 and 41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,4,6-9,11,35,36,40 and 41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/28/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/27/2010 has been entered.

Status of Claim

Claims 2, 4, 6-9, 11, 35, 36, 40 and 41 are pending and under examination.

Withdrawn Rejections

In view of the amendments to the claims the 35 USC 112, second paragraph is withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2, 4, 6-9, 11, 35, 36, 40 and 41, as amended, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 2 which recites “copper from said copper containing compound” is not supported in the as-filed specification. The original disclosure provides support for pyrithione with a “portion of copper”.

Double Patenting

Claims 2, 4, 6-9, 11, 35, 36, 40 and 41 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over e.g., claim 3 of U.S. Patent No. 7026308 ('308 Patent). Although the conflicting claims are not identical, they are not patentably distinct from each other because the '308 Patent is an obvious variant of the instant claimed composition for reasons repeated below.

Claim 3, for example, of the '308 Patent recites a composition comprising a polyvalent metal salt of pyrithione selected from the group consisting of zinc pyrithione, copper pyrithione, and mixtures thereof. The instant composition uses the terms shell and core to describe the components of the composition as pyrithione and copper, respectively. The similar components, if not the same, pyrithione and copper is disclosed by '308 Patent. Thus, the form by which the components exist in a composition is immaterial as the components of the composition are similar, if not the same. The '308 Patent discloses throughout the patent that the polyvalent metal salts of pyrithione are known to be effective biocidal agents and are widely used as fungicides and bacteriocides in paints and metalworking fluids. Polyvalent metal salts of pyrithione are also used as fungicides and bacteriocides in personal care

compositions such as foot powders and anti-dandruff shampoos. The polyvalent metal salts of pyrithione are only sparingly soluble in water and include, inter alia, copper pyrithione. '308 Patent discloses that the metal ion source is present in the composition at a ratio to polyvalent metal salt of pyrithione of from about 5:100 to about 5:1; preferably from about 2:10 to about 3:1; more preferably from about 1:2 to 2:1.

Response to Arguments

Applicants request that the rejection be held in abeyance until indication of allowable subject matter. At that time, Applicants will revisit the issue.

In reply, in the absence of a terminal disclaimer, the rejection is maintained.

Claim Rejections - 35 USC § 102/103

1. Claims 2, 4 and 6-9, as amended, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hosseini et al. US Pat. No. 5,540,860 (7/96) alone or if necessary further in view of the

specification {e.g. page 7, figures (e.g. fig. 2) and examples (e.g. example 1) to demonstrate inherency (e.g. see Exparte Novitski, 26 USPQ2d 1389 (B.P.A.I, 1993); MPEP 2131.01(d) for reasons of record as reiterated below.

Hosseini teaches a "biocidal composition" (e.g. see col. 1, especially lines 45-50) comprising "particles" of "copper pyrithione" formed by aqueous mixing: (a). "a copper compound" (e.g. a "copper salt" such as copper chloride or copper sulfate) and (b), "a pyrithione salt" (see col. 2, example 1). The Hossein et al. method teaches the use of pyrithione salts between about 1 to about 40% (based on total composition weight), between 5 and 25% and 15 and 25% (e.g. see Hossein at col. 2, especially lines 54-60) which anticipates, or alternatively renders obvious the percentage amounts of copper pyrithione adduct shell of present claims 7- 9, respectively, since the reference amounts are within the scope of the claimed amounts. The Hossein teaching of "between about one and about 40% of the pyrithione salt" would anticipate or render obvious the corresponding copper/copper compound amount of "about 99% to about 60%" as presently claimed in claim 4; and additionally, the proportions of the Hossein components (e.g. see bottom of col.2) are within the scope of the wide ratio proportion (1:20 to 20:1) of core/shell ingredients. Hosseini teach the optional

surfactant coating of its particles (e.g. see col. 2, lines 10-17). To the extent that the Hossein reference biocidal copper pyrithione (e.g. spherical) particles differ by failing to explicitly teach the physical nature of the resulting particle e.g. a copper pyrithione "shell" and copper/copper compound "core" such a physical arrangement MUST be inherently present in the Hossein particles since: (a). The Hossein particles are composed of the same ingredients and in the same amounts as the presently claimed particles; (b). The Hossein particles are formulated in the same manner (compare patent example 1 and specification example 1) are shaped and sized (e.g. spherical and about 2-15 micron diameter) as particles disclosed in the present specification(e.g, see columns 2 and 7 of the reference and compare to specification page 7 and specification figure 2); and c. In light of the specification disclosure which teaches that a composite particle containing a metal (e.g., copper) "core" coated with a copper pyrithione "shell" results upon aqueous mixing a copper compound and a pyrithione salt (e.g. sodium pyrithione as found in both the reference and specification example) followed by the precipitation protocol. Where the claimed and prior art products are identical or substantially identical in structure or composition (as in the present case) AND/OR is produced by identical or substantially

identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the appellant and the prior art are the same, the appellant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709,15 USPQ2d 1655, 1658 (Fed. Cir. 1990). For a chemical composition and its properties are inseparable. Therefore, since the prior art teaches the identical or substantially identical chemical structure, the properties appellant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658(Fed. Cir. 1990); and MPEP 2112.01. The PTO lacks the facilities for making comparisons between prior art and claimed compositions.

Response to Arguments

Applicant's arguments filed 4/27/10 have been fully considered but they are not persuasive for reasons set forth in the previous office actions and below.

Applicants recognize that Hosseini et al. disclose discrete particles of copper pyrithione and the method of making the same. But submit that the teaching of the formation of discrete copper pyrithione particles does not disclose or suggest

composite particles having a shell and a core wherein the core and shell have different compositions, much less those as instantly claimed.

In reply, during examination of a patent application, the PTO must interpret terms in a claim using "the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." In re Morris, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Broadest reasonable interpretation of applicants' coined terms "core" and "shell" in the context of the instant claims, is not limited to resulting in formation of a composite particles having a shell and a core but to a composite particles as taught by Hosseini (although' this form is inherent to the composite particles of Hosseini).

Hosseini discloses at e.g., Example 1:

> ……[T]he shape of dried particles of pyrithione was examined under a microscope and found to be of a needle shape, and the mass of dried needles was found to have a relatively narrow particle size distribution. By varying the types of surfactants employed, it was found that non-needle **"platelets"** are produced having a more symmetrical crystalline shape. The platelets are expected to be an advantageous form for use in products such as paints and personal care products (e.g., soaps, shampoos and skin care

> medicaments) due to the increased surface area associated with platelets, affording **enhanced biocidal** protection relative to the needle configuration. The platelets are also an advantageous configuration for copper pyrithione since such particles tend to provide favorable bulk density, dispersibility and/or ease of milling for subsequent processing prior to use. Advantageously the platelets will have a mean sphericity of less than about 0.65 and a median equivalent spherical diameter based on volume of at least about 2 microns but less than 15 microns.

"Platelets" as defined by Webster's dictionary is a minute [protoplasmic] disk. Disk is defined as "round flat plate coated with a [magnetic] substance" thus falling within the scope of the coined term "core" and "shell".

Applicants argue that the teaching of paints containing both copper pyrithione and a copper compound along with components such as resins, solvents, does not disclose or suggest any composite particles either. This is so because there is no force to bring copper pyrithione and copper compound together in paints, particularly in view of the co-presence of numerous other components in the paint, which may intervene the formation of composite particles of any kind, much less the formation of composite particles as instantly claimed.

In reply, attention is drawn again to Example 1 above to which the composite materials were made without being added to paint (but can be added subsequently thereto). The very nature of chemical compounds is such that these compounds are the very force that interact and produce a product with its inherent physical form or properties.

Hosseini above teaches the presence of surfactant (mixture containing fatty acid). See the rejection below.

Applicants argue that instead of pointing to any specific disclosure in the prior art about any composite particles, the Office Action compared the process disclosed in Hosseini et al. in making copper pyrithione particles with the process disclosed in the instant application in making composite particles, and concluded that the copper pyrithione particles disclosed in Hosseini et al. must inherently have a core and shell structure as instantly claimed because the prior art particles and the particles recited in the claims are allegedly produced by identical or substantially identical processes. In response to the suggestion of the Office Action that the prior art process and the process to prepare the claimed composite particles are identical or substantially identical, Applicants outlined the differences between these processes and explained why the prior

art process produces discrete particles that contain only copper pyrithione, whereas the processes as disclosed in the instant application produces composite particles having a core and shell structure as recited in the claims in the amendments/remarks filed on September 10, 2009. In other words, Applicants explained why the copper pyrithione particles disclosed in Hosseini do not inherently have a core and shell structure as recited in the claims.

In reply, attention is directed again to the responses in the last office action and reiterated as follows:

Hosseini at e.g., Background of the invention discloses the well-known composition comprising pyrithione salt plus copper salt (e.g., cuprous oxide):

> Pyrithione salts are well-known salts useful in a wide variety of applications….For example, paints containing a pyrithione salt.. plus a copper salt (e.g. cuprous oxide …) are known in the art, as disclosed, for example, in U.S. Pat. No. 5,057,153. U.S. Pat. No. 5,185,033 describes a process for making a paint or paint base containing copper pyrithione or pyrithione disulfide plus cuprous oxide, wherein the paint exhibits stability against gelation during storage. U.S. Pat. No. 5,246,489 discloses a process for providing in situ generation of copper pyrithione in a paint or paint base which comprises incorporating a metal salt of pyrithione, cuprous oxide….
>
> Copper pyrithione itself is now being considered for use in supplementing or supplementing or supplanting zinc pyrithione in view of the fact that copper pyrithione is more favored from a low-toxicity standpoint and provides

> stability against gelation in products such as paint during storage prior to use…..
>
> New processes for producing copper pyrithione while avoiding this gellation or thickening problem during production of the copper pyrithione solution or dispersion would be highly desired by the biocides manufacturing community. The present invention provides such solution.

Furthermore, how can the same process containing the same components produce different form as that claim? Thus, given the broadest reasonable interpretation of the claim, the argued discrete particles must inherently be within the claim scope of applicants' claimed terms "core" and "shell".

Applicants are, in effect, arguing that a structure[known compound] suggested by the prior art and, hence, potentially in possession the public, is patentable to them because it also possesses an inherent, but hitherto unknown properties (i.e., physical "core" and "shell") which they claim to have discovered. This is not law. A patent on such a structure (properties) would remove the public that which is in the public domain by virtue of its inclusion in, or obviousness from the prior art. In re Wiseman 201 USPQ 658.

The responses to the remarks filed on September 10, 2009 are similarly incorporated herein as similarly relied upon by applicants above.

2. Claims 2, 4, 6-9, 11 and 41, as amended, are rejected under 35 U.S.C. 103(a)as being unpatentable over Hosseini et al. '860 alone or in view of the specification (e.g. page 7, figures (e.g. fig. 2) and examples (e.g. example 1) to demonstrate inherency and Gavin et al. US Pat. 5,342,437 (8/94) for reasons of record as reiterated below.[The substance of the 102/103 rejection of claims 2, 4 and 6-9 over Hosseini et al. alone or in view of the specification is herein incorporated by reference in its entirety.]

The Hosseini et al. particles differ from composition of claim 11 and claim 41 by failing to teach utilizing a "fatty acid coating" (e.g. stearic, linoleic, oleic etc.). In this regard, Hosseini et al. Reference (e.g. see col. 1) teaches that pyrithione salts in the form of crystals(e.g, platelets) are incorporated into manufacturing articles including paints (e.g., coating compositions); with the problem of "gellation" during the production of copper pyrithione solution or dispersion occurring. The Hosseini solution to the gellation problem is to "surfactant coat" its copper pyrithione particles. However Gavin et al. teach that incorporating fatty acids(e.g., stearic, linoleic, oleic etc.) into its pyrithione compositions (e.g. zinc pyrithione/cuprous oxide) prior to incorporation into

manufacturing articles (e.g. coating compositions such as paints) solves the gellation problem. Accordingly, one of ordinary skill in the art at the time of applicant's invention would be motivated to apply a "fatty acid" particle coat, in addition or, in lieu of the "surfactant coat" in order to address the gellation problem. Thus, it would have been prima facie obvious to one of ordinary skill in the art at the time of applicant's invention to modify the Hosseini et al. reference particle to apply a "fatty acid" coat in light of the Gavin reference teaching that to do so would address the gellation problem recognized by both the Hosseini and Gavin references.

Response to Arguments

Applicants state that as discussed in detail above, there is no disclosure or suggestion in Hosseini et al. of a composition comprising composite particles having a core consisting essentially of surface oxidized copper, cuprous oxide or copper hydroxide and a shell consisting essentially of copper pyrithione. Moreover, Hosseini et al. does not disclose a fatty acid coating of the shell. Gavin et al. discloses that the incorporation into a zinc pyrithione and cuprous oxide containing paint of a carboxylic acid reduces the tendency of the paint to gel relative to a comparative paint without the

carboxylic acid. The reference is completely silent as to what effect, if any, that carboxylic acid would have on a paint containing copper pyrithione, much less any effect that the carboxylic acid would have on the gellation of copper pyrithione during the process to prepare copper pyrithione. Accordingly, there is no motivation for one of ordinary skill in the art to incorporate the carboxylic acid disclosed in Gavin et al. into the process of making copper pyrithione disclosed in Hosseini et al. Further, even if a person skilled in the art did utilize a fatty acid in the Hosseini process as suggested by the Examiner, the particles formed would be simple copper pyrithione coated with a fatty acid, which is completely different from the composite particles recited in the instant claims.

In reply, the responses above are also incorporated herein. Furthermore, Hosseini teaches or at least suggests said fatty acids at e.g., col. 3, line 19 up to col. 4, line 47:

> Useful nonionic surfactants include linear alcohol alkoxylates, such as the linear alcohol ethoxylates, ethyoxylated/propoxylated block copolymers, ethyoxylated/propoxylated ***fatty*** alcohols,….

Please see further the responses above.

3. Claims 2, 4, 6-9, 35-36 and 40, as amended, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosseini et al. '860 alone or in view of the specification (e.g. page 7, figures (e.g. fig. 2) and examples (e.g. example 1) to demonstrate inherency and Kappock et al (US Pat. 5,518,774) (5/96). The substance of the 102/103 rejection of claims 2, 4 and 6-9 over Hosseini et al. alone or in view of the specification is herein incorporated by reference in its entirety. The Hosseini et al. spherical particles differ from the presently claimed invention by failing to explicitly teach: (a). selection of "copper oxide" as the metal ion containing compound for use with the pyrithione salt to form copper pyrithione (claim 35); and (b). Copper oxide/copper pyrithione ratio of 5:1 to 15:1 or 10:1 with a "diameter of the coating material" about 1% of the "idealized spherical particle". (claims 36 and 37). Kappock et al. teach that "transchelation" of a soluble pyrithione salt (such as sodium pyrithione) with a metal ion-containing compound to form insoluble pyrithione salts afford an excellent combination "in can" and "dry film" antimicrobial protection to an aqueous coating (e.g., paint) composition. (E.g. see col. 2, lines 30-40). Preferred metals include copper in the form of "copper oxide" or "copper sulfate" with a copper oxide/copper pyrithione ratio of "between about

1:10 and about 10:1"; in which the amount of metal ion compound can vary (e.g..001% or lower to 10% or greater, preferably between 0.005% and 1%) and include optimization so as to enable complete conversion of the pyrithione salt by transchelation to metal pyrithione during storage of the coating composition. See Kappock et al. Col. 2-3, especially col. 3, lines 12-32; patent claims 4-8. Accordingly, the Kappock reference would provide motivation to one of ordinary skill in the art to modify the Hosseini copper pyrithione solid particle (e.g. for use in a coating composition such as paint) by substituting copper oxide for the Hosseini copper salt (e.g. copper sulfate: col. 2, lines 58-66) since: a). The references' teaching of functional equivalency of copper oxide and copper sulfate since both references teach copper sulfate but Kappock further utilized copper oxide; and b). In view of the benefits taught by the Kappock reference of utilizing copper oxide e.g. excellent combination "in can" and "dry film" antimicrobial protection to an aqueous coating (e.g. paint) composition. Similarly, the Kappock reference provides one of ordinary skill in the art with copper oxide/copper pyrithione ratios (e.g., about 10:1) with additional motivation to optimize (e.g. enable complete conversion of the pyrithionie salt to metal pyrithione) to achieve amounts within the scope of the presently claimed

invention of 5:1 to 15:1 or 10:1 with a "diameter of the coating material" about 1% of the "idealized spherical particle". Thus it would have been prima facie obvious to one of ordinary skill in the art to modify the Hosseini et al. spherical particles by a). selecting "copper oxide" as the metal ion containing compound for use with the pyrithione salt to form copper pyrithione (claim 35); and b). utilize copper oxide/copper pyrithione ratio of 5:1 to 15:1 or 10:1 within the scope of the presently claimed invention (e.g., claims 35-36 and 41). Regarding the claimed limitation "diameter of the coating material" about 1% of the "idealized spherical particle" (claims 36 and 37) it is noted that: a). Modification of the Hosseini et al. reference in view of the Kappock reference teaching would result in the "spherical particles" which contain the same components in the same amounts as the presently claimed invention which are made in an analogous manner. In this regard, it is noted that where the claimed and prior art products are identical or substantially identical in structure or composition (as in the present case) AND/OR is produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the

appellant and the prior art are the same, the appellant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709,15 USPQ2d 1655, 1658 (Fed. Cir. 1990). For a chemical composition and its properties are inseparable. Therefore, since the prior art teaches the identical or substantially identical chemical structure, the properties appellant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658(Fed. Cir. 1990); and MPEP 2112.01. The PTO lacks the facilities for making comparisons between prior art and claimed compositions.

> "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, i0 USPQ2d 1843 (Fed. Cir.), cert.denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). See MPEP 2144.05.

Response to Arguments

Applicants submit that Kappock et al. teaches transchelation of copper oxide with a soluble pyrithione salt to produce an insoluble pyrithione salt such as copper pyrithione in a formulated paint composition to provide in-can preservation during storage of the paint. (See col. 3, lines 12-32) This disclosure does not teach or suggest copper pyrithione in a composite particle having a core consisting essentially of surface-oxidized copper powder, cuprous oxide, copper hydroxide and combinations thereof.

In reply, Kappock does not teach copper pyrithione in a composite particle but Hosseini does. Kappock is employed not for the purpose as argued but for its teachings of a copper containing compound as copper oxide.

Applicants state that in the background portion, Hosseini et al. discloses that paints containing copper pyrithione and copper salts are known. But Hosseini et al. does not disclose or suggest any copper salts presented in the paint composition would be suitable for use in the process to make copper pyrithione particles. On the contrary, at column 2, lines 59-60, Hosseini et al. discloses that the copper salt is suitable any

salt containing copper that is soluble in the carrier employed in the reaction. Since Hosseini et al. specifically teaches the use of soluble copper compound (in the process to produce copper pyrithione particles, and it is well known that copper oxide is an insoluble compound, there is no motivation for a person skilled in the art to substitute the soluble copper compound required by Hosseini et al. process with an insoluble copper compound such as copper oxide disclosed in Hosseini et al. Doing so will be against the specific teachings of Hosseini et al. In addition, Kappock et al. disclose the use of copper oxide and copper sulfate in the patentee's composition. Applicants respectfully submit that copper oxide normally refers to copper (1I) oxide, which differs from cuprous oxide. Accordingly, Kappoek et al. does not disclose or suggest any of the core materials recited in the composite particles, namely, cuprous oxide, surface oxidized copper powder, copper hydroxide, and combinations thereof.

In reply, attention is drawn to e.g., Example 1 of Hosseini above which discloses copper compound. Furthermore, claim recites copper containing compound to which the copper oxide of Kappock would be encompassed. Whether the known composition is insoluble or soluble is immaterial to the known composition,

especially since the form by which the compositions, as known in the art, can be in soluble or insoluble form. The preferential form in which it exists would depend upon the purpose for which one intend said known composition.

Furthermore, the prior art teaches that either cuprous oxide as taught by Hosseini or copper oxide as taught by Kappock (the claim recites copper powder, which reads on copper) can be used as the same composition of copper pyrithione is formed.

When considering obviousness of a combination of known elements, the operative question is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." KSR International Co. v. Teleflex Inc., 550 USPQ2d 1385 (2007).

4. Claims 2, 4, 6-9, 35, 36 and 40, as amended, are rejected under 35 U.S.C. 102(e) as being anticipated by Mohseni et al. US Pat. No. 6,465,015 (10/02: filed 2/98).

Mohseni et al. teach "biocidal" (e.g. see bottom of col. 2) compositions comprising metal (e.g. copper) pyrithione particles (e.g. the "shell" component) produced by a reaction (e.g. see patent claim 3) of. a. pyrithione acid or a soluble salt (e.g. Na/K pyrithione: see examples; patent claims especially claims

28, 29 and 42); and b. a compound (e.g. the "core" component "comprises copper"; for incorporation into personal care products (e.g. examples 8-10). See also: Abstract; col. 6-8; Examples 1 and 4, patent claims, especially claims 1, 6, 8, 9 and 16- 20. The Mohseni et al. particles possesses ingredients within the scope of the presently claimed which would inherently possess the same physical parameters as presently claimed (e.g. core/shell structure), especially since both its components and the means of making the copper pyrithione shell is the same e.g. reaction between a metal (e.g. copper) compound and a pyrithione acid/salt. In this regard, where the claimed and prior art products are identical or substantially identical in structure or composition (as in the present case) or are produced by identical or substantially identical processes (as in the present case), a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the appellant and the prior art are the same, the appellant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709,15 USPQ2d 1655, 1658 (Fed. Cir. 1990). For a chemical composition and its properties are inseparable. Therefore, since the prior art teaches the identical or substantially identical chemical

structure, the properties appellant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658(Fed. Cir. 1990); and MPEP 2112.01. The PTO lacks the facilities for making comparisons between prior art and claimed compositions.

5. Claims 2, 4, 6-9, 11, 35-36 and 40-41, as amended, are rejected under 35 U.S.C. 102(e) as being anticipated by Polson et al (USP 6017936).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Polson discloses at e.g., Example 2: A composition comprising particles of copper pyrithione produced from 3% aqueous solution of sodium pyrithione and 2.42% CuCl2. The particle sizes ranged from 0.04 to 0.88 .mu.m, with a median size of about 0.09 .mu.m.

Polson at e.g., col. 4, line 23 up to col. 6, line 60 teaches surfactant containing fatty alcohols.

6. Claims 2, 4, 6-9, 11, 35, 36 and 40-41, as amended, are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al., U.S. Pat. No. 5,916,947 (6/99: filed 9/96 or earlier) in view of Hosseini 5,540,860 (7/96).

Morris et al. disclose a biocidal composition comprising zinc pyrithione powder (e.g. see col. 7, lines 4-10 and col. 8, lines 29-31 which meet the "composite particle" definition e.g. powder comprises particles; and zinc pyrithione is clearly the reaction product of zinc and pyrithione. The Morris et al. particle complex which possesses ingredients within the scope of the presently claimed would inherently possess the same physical parameters as presently claimed (e.g. core/shell structure. Additionally, Morris et al. further discloses a biocidal particle composition (e.g. see col. 1, lines 10-20) that comprises a zinc core (e.g. zinc oxide) and a zinc pyrithione "shell" (e.g. see Example 1 and patent claims 1-17. The presence of ingredients as "composite particles" in the same presently claimed physical relationship (e.g. core/shell) would inherently result in the presently claimed "reaction product" of the

pyrithione with a "portion" of the core metal (e.g. zinc/zinc oxide). Alternatively the reference explicitly teaches that zinc pyrithione acts as a "photosensitizer" which photosensitizes the core zinc metal. This photosensitizing effect would result in a "reaction product" within the scope of the presently claimed invention.

Morris does not teach copper salts as claimed, albeit suggests it. However Hosseini discloses at e.g., col. 1, lines 32-50, that copper pyrithione is now being considered for use in supplementing or supplanting zinc pyrithione in view of the fact that copper pyrithione is more favored from a low-toxicity standpoint and provides stability against gellation in products such as paint during storage prior to use.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to supplant the zinc pyrithione of Morris with copper pyrithione as taught by Hosseini. The numerous advantages cited by Hosseini above would provide the motivation for said substitution. One would have a reasonable expectation of success in using copper pyrithione since the art has shown that for a more stable paint product the known zinc pyrithione has been replaced by copper.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa Wessendorf whose telephone number is (571)272-0812. The examiner can normally be reached on flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571-272-0951951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TERESA WESSENDORF/
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